

FINAL DESIGN - BRIDGE SUBMITTALS CHECKLIST

The following listing of design items is intended to serve as a general pre-submittal tool for the consultant's convenience in identifying typical MoDOT bridge and culvert review items at the PS&E stage. When this checklist is used, it is requested that a copy of the "checked" list be included with the submittals to MoDOT to assist in the reduction of review time required. The format for provision of this information is left to the consultant's discretion. (The following format is shown as an example, grouped by related types of information.) **This Checklist has been modified to identify submittal information needed in addition to that shown on the Preliminary Submittals Checklist (Fig. VIII-7)**

General

___ All outstanding design issues from MoDOT's Preliminary submittals review are addressed in the PS&E submittals.

The Title Sheet

In addition to that information identified in Figure VIII-7 for the Preliminary bridge submittal drawings, the title sheet shall include the following information:

- ___ The name, address and phone number of utility companies
- ___ The date of the current drawings
- ___ A current drawing index
- ___ **Title sheet of the drawings is approved by the LPA (indicated by signature and date)**
- ___ **Title sheet of the drawings is signed and sealed by the engineer**

General Notes, Estimated Quantities, Foundation and Soil Boring Data

- ___ General notes should be expanded to address the following, as applicable:
 - ___ Design specifications
 - ___ **2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition**
 - ___ Design loading
 - ___ Design vehicle loading
 - ___ Seismic Performance Category and Acceleration Coefficient
 - ___ Earth pressure
 - ___ Equivalent fluid pressure
 - ___ Future wearing surface
 - ___ Superstructure design for dead/live loads (simple support, non-comp/continuous composite, etc.)
- ___ Design unit stresses (and Class of concrete, as appropriate)
 - ___ Substructure
 - ___ Concrete barrier curb, when applicable
 - ___ Superstructure (except prestressed girders and concrete barrier curb)
 - ___ Girders
 - ___ Reinforcing steel
 - ___ Piles
 - ___ Miscellaneous structural carbon steel
- ___ Bearing pads
- ___ Joint filler
- ___ Reinforcing steel clearances
- ___ Construction and Materials specifications
 - ___ Missouri Standard Specifications for Highway Construction, 1999 (or latest edition) and current Supplemental Specification Revisions (see next item)

FIG. IX-3-1

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- ☐ (If the MoDOT Std. Specs are superceded by project-specific modifications, the drawing note should reference to the Specifications/Contract Documents package)
- ☐ Acceptance of precast or prefabricated members (as indicated in **Section IX** of the LPA Manual under “Specifications and Job Special Provisions”, if not defined in a separate Specifications Package)
- ☐ Miscellaneous notes
- ☐ Summary of estimated quantities
- ☐ Reinforcing steel bar list and bending diagrams
- ☐ Pile data table (with provision for addition of as-built pile driving data)
- ☐ Design bearing table for footings
- ☐ Soil boring log data and elevations of adequate hard rock as obtained from the geotechnical investigation

Plan and Profile Sheets

In addition to plans information identified in Figure VIII-7 for the Preliminary bridge submittal drawings, the PS&E drawings shall include the following information:

- ☐ **All drawings are signed and sealed by the engineer**
- ☐ Right-of-way requirements
- ☐ Property ownership
- ☐ Benchmark information
- ☐ Indication of the vertical datum
- ☐ Location of utilities
- ☐ Guardrail layout (and identification of end terminals, as appropriate)
- ☐ Construction and final horizontal and vertical clearances (for RR or roadway crossings)
- ☐ Pile cut-off elevations
- ☐ End Bent layout and reinforcing drawings
- ☐ Intermediate Bent layout and reinforcing drawings
- ☐ Bearing pad details
- ☐ Wing details and reinforcing
- ☐ Girder drawings
- ☐ Girder camber diagram
- ☐ Diaphragm details
- ☐ Slab layout and reinforcing
- ☐ Slab haunching diagram
- ☐ Slab pouring sequence
- ☐ Precast/prestressed panels details
- ☐ Slab drains
- ☐ Barrier railing system layout
- ☐ **“TL” capacity of the barrier railing system is identified on the drawings**
- ☐ Railing description, if available – such as “Modified Kansas Corral Bridge Rail”, etc.
- ☐ Railing dimensions
- ☐ Barrier railing attachment details
- ☐ Barrier railing reinforcing details, as appropriate
- ☐ Railing end terminals or approach guardrail details, when applicable
- ☐ For culverts, a plan view showing culvert layout dimensions
- ☐ Culvert cross section showing wall, slab and opening dimensions
- ☐ Elevation view of culvert showing culvert length, distance to headwalls and flowline elevations
- ☐ Culvert reinforcing requirements

FIG. IX-3-2

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- ___ Roadway cross-sections identifying roadway improvement grade elevations, typical section and cut and fill quantities
- ___ Construction staging drawings, as appropriate
- ___ Traffic signal drawings, as appropriate
- ___ Pavement marking and signage, as appropriate

Specifications

- ___ **Cover sheet of the Specifications Package (when provided) is signed and sealed by the engineer**
- ___ Specific reference given to the Missouri Standard Specifications for Highway Construction, 1999 (or latest edition), and current Supplemental Specification revisions
- ___ Engineer-modified standard specifications
- ___ Engineer-prepared job special provisions
- ___ Acceptance plan(s) for precast, structural steel and prefabricated members, as applicable (see **Section IX**, "Specifications and Job Special Provisions")
- ___ **Section IX** "Inspection by MoDOT and FHWA" note included on drawings or in Job Special Provisions
- ___ Any Special Provisions required by the Railway Company, when applicable

Itemized Cost Estimate (Required for all structures)

- ___ Itemized cost estimate provided
- ___ Quantities indicated in the itemized cost estimate are in agreement with tabulated quantities indicated on the drawings.

Structural Inventory and Appraisal Sheet (Required for all structures)

- ___ **All items have been completed in English units and Project Number shown**
- ___ Engineer's name and PE License Number shown
- ___ Inventory and Operating ratings are in agreement with the Load Rating Summary and calculations

Load Rating Computations and Summary (Required for all structures except as noted below)

- ___ **All load ratings are determined using the Load Factor Method**
- ___ Inventory and Operating ratings are determined for the HS20 vehicle
- ___ Posting load ratings determined for all Missouri standard posting vehicles as follows:
 - ___ H20 (Posting rating is 0.86 x the Operating rating determined for the H20 vehicle)
 - ___ 3S2 (Posting rating is 0.86 x the Operating rating determined for the 3S2 vehicle)
 - ___ **MO5 (when the site is within an urban area "commercial zone" boundary – if the Operating rating for the MO5 vehicle is less than 70T, an S-C3 posting is required)**
- ___ Only the controlling load ratings (for all of the vehicles shown above) are shown on the Load Rating Summary Sheet (the format of this sheet is to be the engineer's option)
- ___ **The Load Rating Summary Sheet is signed and sealed by the engineer**
- ___ All load ratings shown on the Summary Sheet are in agreement with the load rating computations
- ___ (Load rating comps. are generally not required for proprietary CMP or concrete arch culverts)
- ___ Project Number is indicated on both the load rating computations package and the Load Rating Summary Sheet